

SDCS

COLLABORATORS

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Chapter 1

SDCS

1.1 SDCS Documentation

Welcome to SDCS, the Sound Disk Construction Set. This program is
copyright ©1994 Frédéric DELACROIX and is released under the terms of
SHAREWARE. See the "Distribution" section to know your rights. ←

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1.2 1.1 Distribution and disclaimer

First of all, SDCS is copyright ©1994 Frédéric Delacroix. Being ←
a freely
distributable does not mean you are allowed to do what you want with it.
These conditions must be respected so that SDCS may be distributed (these
conditions are generally known as SHAREWARE):

- This program MAY NOT be sold for profit. Basically, you may not
charge more (for copy & posting fees..) than Fred Fish does for a single
AmigaLib 3½ disk.
- All files are distributed together, either in archived or
expanded form. However, PD collections that are spread within a small
territory (like the french DPAT collection) are allowed to distribute only
the files that are relative to their language. This includes the
documentation and catalog files. For bigger collections, like Fish and
CAM, I'd prefer the whole archive be distributed.
- All files remain UNCHANGED. If you have comments to add, do so
in a separate file, and make it clear that I'm not the author for those.

All the above DOES NOT apply to the material produced by SDCS. You can do
whatever you want with your Sound disks. They may even be sold. However,
I would appreciate to be listed in the "credits" part...

Now a requirement for the user of SDCS: SDCS is released as SHAREWARE, so
if you like it and use it, you must send me a contribution of \$20. This
will entitle you to the full-working version of SDCS, which is identical to
this demo version except that you can put any picture on your sound disks.
You will also be informed when newer versions become available.

For translators: for now, SDCS is provided only in english and french (I
would not dare my school spanish in it! :-). If you want it translated in
another language, just throw a look at the
How to translate SDCS into your
language
section.

Of course, I do not make any guarantee that SDCS will work as expected. It
was tested a lot, but I cannot be sure there is no bug left. Also, should
any damage be caused, directly or indirectly, by SDCS, I CANNOT BE HELD
RESPONSIBLE FOR IT. You use SDCS AT YOUR OWN RISK. Of course, I reserve
the right to make changes without warning.

1.3 1.2 Credits and thanks

SDCS was written on the great Hisoft Devpac 3. Thanks to Hisoft people.
SDCS was written on an Amiga 500. Thanks to Commodore.
Thanks to Serge Hammouche/France-festival-distribution.
Thanks to Kamel/AmigaNews for the BB checksum routine.
Thanks to Blue Oyster Cult.
Thanks to François Jacobs for a great singing time and lending me his sampler.

Greetings to all my friends.

1.4 1.3 System requirements

SDCS will need the following to run:

- an amiga with two drives, a hard disk, or lots of RAM (for a big RAM disk). This is because SDCS needs to access the data while writing to a disk. Solving this problem for a usable disk changing method would have increased the size of the executable, it wasn't worth it.
- the Kickstart 37+ (Release 2.04) or newer. Kickstart 1.3 owners will have to upgrade.
- Not mandatory, but useful: the locale.library (normally shipped with V38 (Release 2.1) of the operating system) will be used, if present, to make SDCS work in your language. Copy the proper file named "SDCS.catalog" into the directory LOCALE:Catalogs/<language>/.
- Not mandatory, but useful: the amigaguide.library (which may be found in PD collections) can be used via the Help feature to visualize this document from within the program.
- Not mandatory: two external programs, a viewer to show IFF ILBM pictures, and a player to play IFF 8SVX samples.
- As of V1.20, the errormsg.library, which is copyright (C) 1994 by myself. It is included in the distribution.

Explicitely, SDCS needs the following libraries in your LIBS: directory: asl.library, iffparse.library, locale.library, amigaguide.library, and errormsg.library.

1.5 1.4 Making a Sound Disk

Once upon a time, there were two boys, a fellow and I, who happened to sing in front of a sampler connected to my amiga computer. It went like that: "Capitaine Flam tu n'est pas... de notre galaxie... mais du fond de la nuit...". It was just an attempt, but when we listened to the result, we decided to keep it and make a sound disk for it, with that sample and a picture drawn of his own, we would release as "The space singers". Then the first problems began.

First of all, the sample was much too big to be played from Chip memory (it was over 800k long). Secondly, we wanted the demo to run on any amiga, with at least 512K chip ram. The idea of making a normal startup-sequenced dos disk was soon wiped away. We had to do it directly with trackdisk. So we had to make a suitable bootblock, and install the picture along with the

sample. So I wrote the required code while my friend was drawing, and all went well.

When I looked at the result (it was awesome!), I had the idea of making such realizations available to anyone, even without knowledge of assembler. So I went into writing a program able to automagically install a sound disk. And SDCS was the result.

1.6 1.5 What is SDCS ?

SDCS stands for Sound Disk Construction Set. It will enable you, through a convenient Graphic User Interface, to chose a picture and a sample files, and then put them together on a disk along with some boot code. Later, when you boot the disk, you will see your picture and hear your sample. The picture can be nearly any normally displayable IFF ILBM file, and the sample is a normal IFF 8SVX file as produced by sampler programs like TechnoSound.

The GUI itself has shortcuts and help features, the screen is public. See the reference section for a detailed explanation of all functions and abilities.

1.7 2.1 Launching SDCS

SDCS can be started either from Workbench or CLI. For now it does not recognize any arguments. From the CLI, just type SDCS , and from the Workbench, double-click the icon.

1.8 2.2 SDCS's Graphic User Interface

When SDCS successfully starts up, it will open a new screen. ←
This is indeed a public screen whose name is "SDCS". You can use it to open shells, AmigaGuide windows or ToolManager docks. On the screen, you will see some gadgets under a big title. These gadgets are:

Drive:

DF0:

Help...

Info...

GO !

Picture:

Show

Sound:

Listen

Quit

(this representation is close enough). Click on these gadgets ←
to get an

explanation.

1.9 2.2.1 The Drive gadget

This is a cycle gadget. Clicking on it several times rotates the drive name: DF0:,...,DF3:. Note that you may specify a drive that is not connected, but trackdisk won't open in that case.

1.10 2.2.2 The Help gadget

Provided you possess the amigaguide.library and you have enough memory, this gadget will show you this document.

1.11 2.2.3 The Info gadget

This will bring up a small requester that will show you important things like the copyright notice, my address, and the memory left.

1.12 2.2.4 The Picture gadget

This string gadget will contain the name of the picture that is to ←
be stuck
onto your disk at installation time. See
Picture requirements
for more
info. If you press Help while this gadget is active, an asl file requester appears.

This is for registered users only. Other users will just get a message saying so.

1.13 2.2.5 The Show gadget

This gadget, when pressed, will invoke an external program (←
defined by

Environment variables

```

) to show the picture whose name is contained in the
Picture
  gadget.

```

This is for registered users only. Other users will just get a message saying so.

1.14 2.2.6 The Sound gadget

```

This string gadget will contain the name of the sample that is to ↔
  be heard
when you boot your sound disk. See
  Sample requirements
  for more info. If
you press Help while this gadget is active, an asl file requester appears.

```

1.15 2.2.7 The Listen gadget

```

This gadget, when pressed, will invoke an external program ( ↔
  defined by
Environment variables
) to listen to the sound whose name is contained in
the
  Sound
  gadget.

```

1.16 2.2.8 The Go gadget

```

This gadget will actually begin the installation after ↔
  confirmation. See
the
  installation procedure
  section for a complete reference.

```

1.17 2.2.9 The Quit gadget

This gadget will enable you to quit the program, after confirmation.

1.18 2.3 Keyboard shortcuts

Some shortcuts are provided for all the gadgets described earlier. ↔
 For the
 english version of the program they are:

D - Rotate
 Drive
 gadget H - Activate
 Show
 gadget

Help - Activate
 Help
 gadget L - Activate
 Listen
 gadget

I - Activate
 Info
 gadget G - Activate
 Go
 gadget

P - Activate
 Picture
 gadget Q - Activate
 Quit
 gadget

S - Activate
 Sound
 gadget

There is one more goodie: when a string gadget (namely
 Picture
 or
 Sound
)

is activated, pressing Help will bring up a FileRequester (produced by the asl.library), and if the requester is validated, the pathname is inserted into the gadget.

These shortcuts are specific to the english version of SDCS. Translators can redefine them for their languages (but the Help key will always work).

1.19 2.4 Environment variables

SDCS makes use of two environment variables: they are named ↔
 VIEWER and
 PLAYER. Both are optionnal, here is a short explanation:

VIEWER, if defined, will be taken as the name of the program to be run when the user clicks the

 Show
 gadget. It defaults to "PPShow". This program
 must of course be in your current path. C: should always work.

PLAYER, if defined, will be taken as the name of the program to be run when the user clicks the

 Listen

gadget. It defaults to "Play_IFF". The program must of course be in your current path. I suggest you put it C:.

To set one of these variables, you must use the Setenv command. I think Set will work only if entered from the same process that started SDCS.

```
ex:1> SetEnv PLAYER Play8SVX
```

If you want the change to be reboot-resistant, issue this command:

```
1> copy ENV:PLAYER ENVARC:
```

Hop.

1.20 3.1 The picture requirements

SDCS requires a picture name be given in the
Picture

gadget. If you do not want the future Sound disk to display a picture while playing your sample, I suggest you make a one-line one-bitplane black picture. Although I have not tested it, I guess providing a 0-bitplane picture won't work (anyway, the boot code does not support it).

The picture must be an IFF ILBM file as normally generated by paint programs. It must contain the chunks BODY (of course), CMAP and BMHD. The CAMG chunk is recognized, but is optionnal (default viewmodes are 0). If you do not understand this, no matter, your paint program takes care of it. Note that the BODY chunk may be compressed by the ByteRun1 algorithme.

SDCS works with all resolutions and depths that are supported by the original chip set. ECS and AGA modes are not supported (yet?). I'm sorry, I only own an old A500...

Unregistered users will get a standard picture, with my address.

1.21 3.2 The sample requirements

SDCS requires a sample name be given in the
Sound

gadget. It is an IFF 8SVX file (raw files do not work). The only required chunk is BODY, but, if present, the VHDR chunk will be scanned to find out the period of the sample (the default is 248). The Fibonacci compression is NOT supported yet.

This kind of file is directly generated by an Audio sampler program like TechnoSound. But remember you may have to set the period before saving !

For now, only mono samples are supported. I am currently working on stereo. It shall be usable for the next release.

1.22 3.3 The installation procedure

The installation procedure is really simple. After having fed ↵
 the
 Drive
 ,

Picture
 , and
 Sound
 gadgets, just press on the big
 GO !

button. SDCS will

prompt you for a disk in the drive and will ask you to confirm the installation.

WARNING: Once the installation has begun, any data on the disk will be erased. You can still recover some data if you stop the installation with the abort button (thanks to DiskDoctor), but you'd better be careful.

Note that the disk you insert must be formatted, since SDCS uses TD_WRITE instead of TD_FORMAT (it would have required more setup, and I'm lazy).

Supposedly you confirmed, SDCS begins the installation. All gadgets are disabled and a requester window appears, summing up what SDCS is doing. If you press on the abort button, the installation will stop (this might not be immediate). The title of that window changes as SDCS enters each phase of the installation.

First, SDCS will install the picture, then the sample, and finally the boot code. Any occurring error will force SDCS to stop. SDCS accesses the files while installing, that's why it requires two drives, a hard disk, or a big RAM disk (see

System requirements
).

If all goes well, SDCS clears the requester and resumes normal GUI operation.

1.23 3.4 Running your Sound Disk

This is probably the easiest part: reset your machine and boot on the previously installed disk (make sure you've saved everything).

When the playing is over, your amiga will gently reset (without guru).

1.24 4.1 The bootblock code

This section describes the bootblock code. It is therefore reserved to the persons who have some knowledge of assembler.

SDCS of course installs a bootblock with custom code. This will make most virus-killers alert you with some "Unknown bootblock" message. Do not install it ! It would destroy your beautiful demo. It contains NO virus, just leave the bootblock alone.

Since the Amiga was born, that was quite a long time ago, a lot of demos were created. Almost all of them were made by accessing directly the hardware. Everything seemed to be right until these last few years, when new amigas were created. The demos that were programmed against the rules given by Commodore did not work any more.

I wanted SDCS's code to work not only on any amiga, but also on any amiga yet to appear. That's why I made the code (almost) completely system-friendly. The picture is thus displayed in a bitmap of a viewport, attached to a View structure. Disk accesses are of course done via the trackdisk.device and all memory used is allocated from the system. The trackdisk buffer is in chip-ram so that it works also with Kickstart 1.3, and I took in account a small bug in Kickstart 1.3 (DMA were not properly turned on).

I said almost system-friendly. Indeed, it was not possible to output the sample through the audio.device. A few experiments show that the audio.device's resident tag has a lower priority than bootstrap (even lower than DOS). So when the bootblock is loaded, it is not installed yet. As the bootblock does not return, it never gets initialized. InitResident()ing it by hand did not seem to work so I had to poke directly into the hardware registers. However, there is VERY little chance it might cause a compatibility problem in the future (it would probably be the case if I had done it for the graphics).

Another exception: SDCS's bootblock uses the Audio 0 interrupt for double-buffering the sample. However, using exec's SetIntVector() function did not seem to work. I do not know why (maybe it has to do with audio.device not being initialized), but poking directly to location \$70 did. It works perfectly and it is very unlikely to ever cause problems. If I can make SetIntVector() work correctly, I will change this in the next release.

When the reset occurs, it is done respectfully to the rules given by Commodore. Some (demo-makers) do their reset by JMPing to a ROM address!!! It is not SDCS's case: the reset routine is the one given by Commodore. It won't cause gurus on exotically expanded amigas.

1.25 4.2 How to translate SDCS into your language

As said earlier, SDCS uses the locale.library if installed. This means that SDCS can be made to work in your language, provided you possess the correct catalog file. For now, the catalog is only available in french (the english strings are built-in). You can make the translations yourselves if you do what follows:

There is a catalog translation file along with this distribution. It is a blank one, generated by Catcomp. Just fill in the blanks with your translations of the english strings placed in comments and send me the resulting file. I will then generate the corresponding catalog and include it in the next release of SDCS (you will of course be listed in the credits and receive the catalog yourself).

If you know the locale.library, you probably already know how to make the translation file. Read on however, because there are some more rules specific to SDCS:

- all strings that are displayed as messages, window titles etc must be normally translated.

- the strings that are displayed in the gadgets of the GUI (and only them, not the requester gadgets) must be preceded by the shortcut letter. If a character (the shortcut character in fact) must be underlined, place a "_" before it. This would give for example as the french translation for the label of the picture gadget:

```
MI_mage:
^ ^
| |
| + the m is underlined
+ the keyboard shortcut for activating this gadget is M.
```

Please do not make the gadget labels wider than their box !

You can also translate the guide file, but I ask you not to change the node names (leave them in english), the user never sees them anyway.

At last, it would be perfect if someone happened to translate the catalog for `errmsg.library` !

1.26 4.3 Contacting the author

If you want to contact me, then write at the following address. I welcome everything: suggestions, bug reports, translation files, money, nice sound-disks, postcards, menaces, amigas 1200, PD disks.... whatever you can think of! Remember, SDCS is SHAREWARE, don't forget to register!

I am sorry, I have no e-mail address (don't even own a modem). But I will try to answer every letter I receive!

```
Frédéric DELACROIX
5 rue d'Artres
59269 QUERENAING
FRANCE, EARTH.
```